Claims

1. A method for determining a patient-specific, non-antagonistic ratio of two or more therapeutic agents comprising:

i) providing diseased cells obtained from a patient;

ii) characterizing a molecular phenotype of said diseased cells;

iii) matching the molecular phenotype of said diseased cells with the molecular phenotype of a cultured cell line;

iv) providing at least a first and a second therapeutic agent; and

v) assaying the first therapeutic agent in combination with the second therapeutic agent at various ratios *in vitro* on said cultured cell lines to determine a ratio of said first and second therapeutic agents that exhibits a non-antagonistic biological effect on said cultured cell lines,

whereby said ratio is identified as a patient-specific, non-antagonistic ratio.

2. The method of claim 1, wherein said patient-specific ratio exhibits said non-antagonistic biological effect on said cultured cell line over at least 5% of such concentration range where > 1% of the cells are affected ($f_a > 0.01$) in said *in vitro* assay for biologic effect.

3. The method of claim 2, wherein said non-antagonistic biological effect is exhibited over at least 5% of the concentration range such that 20-80% of the cultured cells are affected ($f_a = 0.2\text{-}0.8$) in said *in vitro* assay.

4. The method of claim 3, wherein said non-antagonistic effect is exhibited over at least 20% of the concentration range such that 20-80% of the cultured cells are affected in said *in vitro* assay.

5. A method of preparing a patient-specific pharmaceutical preparation comprising:

i) providing a first composition comprising a first delivery vehicle, said first delivery vehicle having stably associated therewith a first therapeutic agent;

ii) providing a second composition comprising a second delivery vehicle, said delivery vehicle having stably associated therewith a second therapeutic agent; and

iii) combining said first composition and said second composition in a ratio of first therapeutic agent to second therapeutic agent that provides a non-antagonistic effect to cultured cells that have a molecular phenotype similar or identical to cells harvested from the diseased tissue or blood of said patient.

6. The method of claim 5, wherein combination of said first and second composition occurs immediately prior to use.

7. The method of claim 5, wherein said ratio exhibits said non-antagonistic biological effect on said cultured cells over at least 5% of such concentration range where > 1% of the cells are affected ($f_a > 0.01$) in said *in vitro* assay for biologic effect.

8. The method of claim 7, wherein said non-antagonistic effect is exhibited over at least 5% of the concentration range such that 20-80% of the cultured cells are affected ($f_a = 0.2\text{-}0.8$) in said *in vitro* assay.

9. The method of claim 8, wherein said non-antagonistic effect is exhibited over at least 20% of the concentration range such that 20-80% of the cultured cells are affected in said *in vitro* assay.

10. A method of preparing a patient-specific pharmaceutical preparation comprising:

stably associating with a delivery vehicle at least a first and second therapeutic agent in a ratio of the first to second therapeutic agent that provides a non-antagonistic effect to cultured cells that have a molecular phenotype similar or identical to cells harvested from the diseased tissue or blood of the patient.

11. The method of claim 10, wherein the first therapeutic agent is stably associated with a first delivery vehicle and the second therapeutic agent is stably associated with a second delivery vehicle.

12. The method of claim 10, wherein said ratio exhibits said non-antagonistic biological effect on said cultured cells over at least 5% of such concentration range where > 1% of the cells are affected ($f_a > 0.01$) in said *in vitro* assay for biologic effect.

13. The method of claim 12, wherein said non-antagonistic effect is exhibited over at least 5% of the concentration range such that 20-80% of the cultured cells are affected (f_a = 0.2-0.8) in said *in vitro* assay.

14. The method of claim 13, wherein said non-antagonistic effect is exhibited over at least 20% of the concentration range such that 20-80% of the cultured cells are affected in said *in vitro* assay.

15. The method of claim 10, wherein the first and second therapeutic agents are co-encapsulated in the same delivery vehicle.

16. The method of claim 10, wherein the first and second therapeutic agents are separately encapsulated with first and second delivery vehicles.

17. A composition prepared by the method of claim 5.

18. A composition prepared by the method of claim 10.

19. A method to provide a patient with an individualized treatment which method comprises administering to said patient the composition of claim 17.

20. A method to provide a patient with an individualized treatment which method comprises administering to said patient the composition of claim 18.

21. A method of providing a patient with an individualized treatment comprising:

administering to said patient a first composition comprising a first delivery vehicle associated with a first therapeutic agent and a second composition comprising a second delivery vehicle stably associated with a second therapeutic agent in a ratio that exhibits a non-antagonistic biological effect on cultured cells having a similar or identical molecular phenotype to cells obtained from said patient, wherein the pharmacokinetics of the first and second delivery vehicles are coordinated.

22. A method of providing a pharmaceutical preparation individualized to a particular patient comprising:

a) obtaining diseased cells from the patient;

b) characterizing the molecular phenotype of said patient's diseased cells;

c) matching the molecular phenotype of said patient's diseased cells with the molecular phenotype of cultured cells;

d) providing at least a first and a second therapeutic agent;

e) conducting an assay *in vitro* on said cultured cells to determine a ratio of at least a first and second therapeutic agent that exhibits a non-antagonistic biological effect on said cultured cells; whereby said ratio is determined as a patient-specific ratio for said individualized treatment; and

f) mixing a first composition comprising a first delivery vehicle associated with said first therapeutic agent with a second composition comprising a second delivery vehicle stably associated with said second therapeutic agent in the patient-specific ratio determined in e), wherein the pharmacokinetics of the delivery vehicles in said first and second compositions are coordinated.

23. The method of claim 22, wherein said ratio exhibits said non-antagonistic biological effect on said cultured cells over at least 5% of such concentration range where > 1% of the cells are affected ($f_a > 0.01$) in said *in vitro* assay for biologic effect.

24. The method of claim 23, wherein said non-antagonistic effect is exhibited over at least 5% of the concentration range such that 20-80% of the cultured cells are affected ($f_a = 0.2\text{-}0.8$) in said *in vitro* assay.

25. The method of claim 24, wherein said non-antagonistic effect is exhibited over at least 20% of the concentration range such that 20-80% of the cultured cells are affected in said *in vitro* assay.